

**Notice of Allowability**

Application No.

10/058,324

Examiner

Ling-Siu Choi

Applicant(s)

SU ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to the Amendment.
2. ☐ The allowed claim(s) is/are 11-24.
3. ☒ The drawings filed on 01/11/02 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### DETAILED ACTION

1. This Office Action is in response to the Amendment filed May 12, 2004. Claims 1-10 and 25-40 have been canceled. Claims 11-24 are now pending.

#### *Allowable Subject Matter*

2. Claims 11-24 are allowed.
3. The following is an examiner's statement of reasons for allowance:
- The present claims are allowable over the closest references: Arney et al. (US 6,329,058 B1).

The present invention relates to a method to prepare an organic/inorganic hybrid material which is prepared by the steps of

1	$M[OR^1-O-CO-C(R^2)=CR^3R^4]_n$ (hydrolysis) →	metal oxide nanoparticles acrylate monomers
wherein the metal oxide nanoparticles are well dispersed in the acrylate matrix		
2	metal oxide nanoparticles /acrylate monomers (free radical polymerization) →	organic/inorganic hybrid material
wherein the metal oxide nanoparticles are dispersed in a polyacrylate		

(summary of claim 11)

Arney et al. disclose an organic/inorganic hybrid material, wherein a titanium based oxide particle treated with a dispersing agent are highly dispersed in an organic material, the titanium based oxide particles being greater than about 4 nanometers and less than about 20

nanometers and is transparent (abstract; claim 1). Arney et al. further disclose that the organic/inorganic hybrid material is prepared by the steps of (a) hydrolysis and condensation of the dispersing agent on the titanium based oxide particle, wherein the dispersing agent can be methacrylic acid, **methacryloxyethyl** acetoacetate, or **3-acryloxypropyl**trimethoxysilane, (b) dispersion of the treated titanium based oxide in ethylenically unsaturated monomer such as acrylates or methacrylate to form a mixture, and then (c) free radical polymerization of the mixture to form the organic/inorganic hybrid material (col. 4, line 65-67; col. 5, lines 1-67; col. 6, line 1-25; col. 7, lines 3-19; col. 9, lines 33-39). However, Arney et al. do not teach or fairly suggest the specific in-situ process to prepare the organic/inorganic hybrid material.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

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*Ling -Siu Choi*  
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May 25, 2004